

Appl. No. 10/613,373
Docket No. 1997B050/3
Supplemental Preliminary Amdt. dated July 13, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1-30. cancelled
31. A polymer blend comprising:
- (a) polypropylene having at least about 90 wt% propylene-derived units; and
 - (b) a crystallizable polymer comprising:
 - (i) from 10 to 16 wt% ethylene-derived units; and
 - (ii) at least 75 wt% propylene-derived units.
32. The polymer blend of claim 31, wherein the polypropylene of component (a) is isotactic.
33. The polymer blend of claim 32, wherein the crystallizable polymer of component (b) has isotactically crystallizable propylene sequences.
34. The polymer blend of claim 31, wherein the crystallizable polymer of component (b) has a weight average molecular weight (Mw) by GPC of at least 248,900.

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35. The polymer blend of claim 31, wherein the crystallizable polymer of component (b) has a molecular weight distribution of from about 2.0 to about 3.2.
36. The polymer blend of claim 31, wherein the glass transition temperature of the crystallizable polymer of component (b) is retained in the polymer blend.
37. The polymer blend of claim 31, wherein the polypropylene of component (a) has a melting point of from about 115°C to about 170°C.
38. The polymer blend of claim 31, wherein the crystallizable polymer of component (b) has a melting point below that of the polypropylene of component (a).
39. The polymer blend of claim 31, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 44 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
40. A polymer blend comprising:
 - (a) isotactic polypropylene having at least about 90 wt% propylene-derived units; and
 - (b) a crystallizable polymer having a weight average molecular weight (Mw) by GPC of at least 248,900, said crystallizable polymer comprising:
 - (i) from about 4 to about 25 wt% ethylene-derived units; and

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(ii) at least 75 wt% propylene-derived units.

41. The polymer blend of claim 40, wherein the crystallizable polymer of component (b) comprises from about 6 to about 18 wt % ethylene-derived units.
42. The polymer blend of claim 40, wherein the crystallizable polymer of component (b) comprises from 10 to 16 wt% ethylene-derived units.
43. The polymer blend of claim 40, wherein the crystallizable polymer of component (b) has isotactically crystallizable propylene sequences.
44. The polymer blend of claim 40, wherein the crystallizable polymer of component (b) has a molecular weight distribution of from about 2.0 to about 3.2.
45. The polymer blend of claim 40, wherein the glass transition temperature of the crystallizable polymer of component (b) is retained in the polymer blend.
46. The polymer blend of claim 40, wherein the polypropylene of component (a) has a melting point of from about 115°C to about 170°C.
47. The polymer blend of claim 40, wherein the crystallizable polymer of component (b) has a melting point below that of the polypropylene of component (a).

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48. The polymer blend of claim 40, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 44 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
49. The polymer blend of claim 40, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 56 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
50. A polymer blend comprising:
- (a) polypropylene having at least about 90 wt% propylene-derived units; and
 - (b) a crystallizable polymer comprising:
 - (i) from about 4 to about 25 wt% ethylene-derived units; and
 - (ii) at least 75 wt% propylene-derived units;
- wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 44 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
51. The polymer blend of claim 50, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 56 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).

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52. The polymer blend of claim 50, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 67 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
53. The polymer blend of claim 50, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 78 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
54. The polymer blend of claim 50, wherein the polypropylene of component (a) is isotactic.
55. The polymer blend of claim 54, wherein the crystallizable polymer of component (b) has isotactically crystallizable propylene sequences.
56. The polymer blend of claim 50, wherein the crystallizable polymer of component (b) comprises from about 6 to about 18 wt % ethylene-derived units.
57. The polymer blend of claim 50, wherein the crystallizable polymer of component (b) comprises from 10 to 16 wt% ethylene-derived units.
58. The polymer blend of claim 50, wherein the crystallizable polymer of component (b) has a weight average molecular weight (Mw) by GPC of at least 248,900.

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59. The polymer blend of claim 50, wherein the glass transition temperature of the crystallizable polymer of component (b) is retained in the polymer blend.
60. A polymer blend comprising:
- (a) units derived from polypropylene having at least about 90 wt% propylene-derived units; and
 - (b) units derived from a crystallizable polymer comprising:
 - (i) from about 4 to about 25 wt% ethylene-derived units; and
 - (ii) at least 75 wt% propylene-derived units;
- wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 44 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
61. The polymer blend of claim 60, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 56 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
62. The polymer blend of claim 60, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 67 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
63. The polymer blend of claim 60, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 78 wt%,

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based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).

64. The polymer blend of claim 60, wherein the polypropylene of component (a) is isotactic.
65. The polymer blend of claim 64, wherein the crystallizable polymer of component (b) has isotactically crystallizable propylene sequences.
66. The polymer blend of claim 60, wherein the crystallizable polymer of component (b) comprises from about 6 to about 18 wt % ethylene-derived units.
67. The polymer blend of claim 60, wherein the crystallizable polymer of component (b) comprises from 10 to 16 wt% ethylene-derived units.
68. The polymer blend of claim 60, wherein the crystallizable polymer of component (b) has a weight average molecular weight (Mw) by GPC of at least 248,900.
69. The polymer blend of claim 60, wherein the glass transition temperature of the crystallizable polymer of component (b) is retained in the polymer blend.
70. A polymer blend comprising:
 - (a) polypropylene having at least about 90 wt% propylene-derived units; and

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(b) a polymer comprising:

- (i) from about 4 to about 25 wt% ethylene-derived units; and
- (ii) at least 75 wt% propylene-derived units;

wherein the polymer of component (b) is made using a transition metal-containing catalyst composition, wherein the transition metal is principally hafnium.

- 71. The polymer blend of claim 70, wherein the polypropylene of component (a) is isotactic.
- 72. The polymer blend of claim 71, wherein the polymer of component (b) has isotactically crystallizable propylene sequences.
- 73. The polymer blend of claim 70, wherein the polymer of component (b) has a weight average molecular weight (Mw) by GPC of at least 248,900.
- 74. The polymer blend of claim 70, wherein the glass transition temperature of the polymer of component (b) is retained in the polymer blend.
- 75. The polymer blend of claim 70, wherein the transition metal-containing catalyst composition is a metallocene.
- 76. The polymer blend of claim 70, wherein the polymer of component (b) is present in the blend in an amount of at least 44 wt%, based on the combined weight of the polymer of component (b) and the polypropylene of component (a).

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77. The polymer blend of claim 70, wherein the polymer of component (b) is present in the blend in an amount of at least 56 wt%, based on the combined weight of the polymer of component (b) and the polypropylene of component (a).
78. The polymer blend of claim 70, wherein the polymer of component (b) comprises from about 6 to about 18 wt % ethylene-derived units.
79. The polymer blend of claim 70, wherein the polymer of component (b) comprises from 10 to 16 wt% ethylene-derived units.
80. A polymer blend comprising:
- (a) units derived from polypropylene having at least about 90 wt% propylene-derived units; and
 - (b) units derived from a polymer comprising:
 - (i) from about 4 to about 25 wt% ethylene-derived units; and
 - (ii) at least 75 wt% propylene-derived units;
- wherein the polymer of component (b) is made using a transition metal-containing catalyst composition, wherein the transition metal is principally hafnium.
81. The polymer blend of claim 80, wherein the polypropylene of component (a) is isotactic.
82. The polymer blend of claim 81, wherein the polymer of component (b) has isotactically crystallizable propylene sequences.

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83. The polymer blend of claim 80, wherein the polymer of component (b) has a weight average molecular weight (Mw) by GPC of at least 248,900.
84. The polymer blend of claim 80, wherein the glass transition temperature of the polymer of component (b) is retained in the polymer blend.
85. The polymer blend of claim 80, wherein the transition metal-containing catalyst composition is a metallocene.
86. The polymer blend of claim 80, wherein the polymer of component (b) is present in the blend in an amount of at least 44 wt%, based on the combined weight of the polymer of component (b) and the polypropylene of component (a).
87. The polymer blend of claim 80, wherein the polymer of component (b) is present in the blend in an amount of at least 56 wt%, based on the combined weight of the polymer of component (b) and the polypropylene of component (a).
88. The polymer blend of claim 80, wherein the polymer of component (b) comprises from about 6 to about 18 wt % ethylene-derived units.
89. The polymer blend of claim 80, wherein the polymer of component (b) comprises from 10 to 16 wt% ethylene-derived units.
90. A polymer blend comprising:

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- (a) polypropylene having at least about 90 wt% propylene-derived units; and
 - (b) a crystallizable polymer comprising:
 - (i) from about 4 to about 25 wt% ethylene-derived units; and
 - (ii) at least 75 wt% propylene-derived units;
- wherein the glass transition temperature of the crystallizable polymer of component (b) is retained in the polymer composition.

- 91. The polymer blend of claim 90, wherein the polypropylene of component (a) is isotactic.
- 92. The polymer blend of claim 91, wherein the crystallizable polymer of component (b) has isotactically crystallizable propylene sequences.
- 93. The polymer blend of claim 90, wherein the crystallizable polymer of component (b) comprises from about 6 to about 18 wt % ethylene-derived units.
- 94. The polymer blend of claim 90, wherein the crystallizable polymer of component (b) comprises from 10 to 16 wt% ethylene-derived units.
- 95. The polymer blend of claim 90, wherein the crystallizable polymer of component (b) has a weight average molecular weight (Mw) by GPC of at least 248,900.

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96. The polymer blend of claim 90, wherein the crystallizable polymer of component (b) has a molecular weight distribution of from about 2.0 to about 3.2.
97. The polymer blend of claim 90, wherein the crystallizable polymer of component (b) has a melting point below that of the polypropylene of component (a).
98. The polymer blend of claim 90, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 44 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
99. The polymer blend of claim 90, wherein the crystallizable polymer of component (b) is present in the blend in an amount of at least 56 wt%, based on the combined weight of the crystallizable polymer of component (b) and the polypropylene of component (a).
100. A polymer blend comprising:
- (a) polypropylene having at least about 90 wt% propylene-derived units; and
 - (b) a polymer comprising:
 - (i) from about 4 to about 25 wt% ethylene-derived units; and
 - (ii) at least 75 wt% propylene-derived units;
- wherein the polymer blend will accept a strain of 250% and higher strain levels without failure.

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101. The polymer blend of claim 100, wherein the polymer blend will accept a strain of 250% without failure after being heated to 215°C and subsequently annealed.
102. The polymer blend of claim 100, wherein the polypropylene of component (a) is isotactic.
103. The polymer blend of claim 102, wherein the polymer (b) has isotactically crystallizable propylene sequences.
104. The polymer blend of claim 100, wherein the polymer of (b) has a weight average molecular weight (Mw) by GPC of at least 248,900.
105. The polymer blend of claim 100, wherein the glass transition temperature of the polymer of (b) is retained in the polymer blend.
106. The polymer blend of claim 100, wherein the polymer of (b) is present in the blend in an amount of at least 44 wt%, based on the combined weight of the polymer of (b) and the polypropylene of component (a).
107. The polymer blend of claim 100, wherein the polymer of (b) is present in the blend in an amount of at least 56 wt%, based on the combined weight of the polymer of (b) and the polypropylene of component (a).
108. The polymer blend of claim 100, wherein the polymer of (b) comprises from about 6 to about 18 wt % ethylene-derived units.

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109. The polymer blend of claim 100, wherein the polymer of (b) comprises from 10 to 16 wt% ethylene-derived units.
110. The polymer blend of claim 100, wherein the polymer blend will accept a strain of 300% and higher strain levels without failure.
111. The polymer blend of claim 100, wherein the polymer blend will accept a strain of 400% and higher strain levels without failure.
112. The polymer blend of claim 100, wherein the polymer blend will accept a strain of 500% and higher strain levels without failure.
113. The polymer blend of claim 100, wherein the polymer blend will accept a strain of 600% and higher strain levels without failure.
114. The polymer blend of claim 100, wherein the polymer blend will accept a strain of 700% and higher strain levels without failure.
115. The polymer blend of claim 100, wherein the polymer blend will accept a strain of 750% and higher strain levels without failure.
116. A polymer blend comprising:
 - (a) isotactic polypropylene having at least about 90 wt% propylene-derived units; and
 - (b) a diene-containing crystallizable polymer comprising:
 - (i) from about 4 to about 25 wt% ethylene-derived units;
 - (ii) at least 75 wt% propylene-derived units; and

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(iii) non-conjugated diene-derived units in an amount of 10wt% or less.

117. The polymer blend of claim 116, wherein the non-conjugated diene is selected from the group consisting of ethylidene norbornene, vinyl norbornene, and dicyclopentadiene.

118. The polymer blend of claim 116, wherein the crystallizable polymer of component (b) comprises non-conjugated diene derived units in an amount of less than 5 wt%.

119. The polymer blend of claim 118, wherein the non-conjugated diene is selected from the group consisting of ethylidene norbornene, vinyl norbornene, and dicyclopentadiene.

120. A polymer blend comprising:

- (a) isotactic polypropylene having at least about 90 wt% propylene-derived units; and
- (b) at least about 5 wt%, based on the combined weight of component (a) and component (b), of a polymer having isotactically crystallizable propylene sequences, and having a weight average molecular weight (Mw) by GPC of at least 248,900, the polymer comprising:
 - (i) from 10 to 16 wt% ethylene-derived units; and
 - (ii) at least 75 wt% propylene-derived units.

121. An article of manufacture comprising the blend composition of claim 31.

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- 122. The article of claim 121, wherein the article is a film.
- 123. The article of claim 121, wherein the article is a fiber.
- 124. The article of claim 121, wherein the article is a molded object.